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PATENT

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In re Application of:

R. Sanders Williams and
Beverly Rothermel

Group Art Unit: Unknown

Examiner: Unknown

Serial No.: Unknown

Atty. Dkt. No.: UTSD:674US

Filed: February 13, 2001

For: METHODS AND COMPOSITIONS
RELATING TO MUSCLE SELECTIVE
CALCINEURIN INTERACTING
PROTEIN (MCIP)

STATEMENT AS REQUIRED UNDER 37 C.F.R. § 1.821(f)

BOX SEQUENCE

Commissioner for Patents
Washington, D.C. 20231

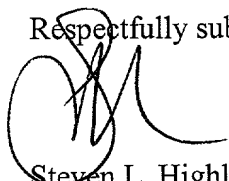
Commissioner:

Submitted herewith is a computer readable form and a paper copy of the sequence listing of those sequences in the captioned patent application. The computer readable form of the sequence listing is the same as the paper copy of the sequence listing. The sequence information provided in the Specification is also the same as the sequence listing of the enclosed computer readable and paper forms of the sequence listing.

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Date: February 13, 2001

Respectfully submitted,



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SEQUENCE LISTING

<110> WILLIAMS, R. SANDERS
ROTHERMEL, BEVERLY

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CALCINEURIN INTERACTING PROTEIN (MCIP)

<130> UTSD:674US

<140> UNKNOWN

<141> 2001-02-13

<150> 60/216,601

<151> 2000-07-07

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| Ala | Pro | Pro | Asn | Pro | Asp | Lys | Gln | Phe | Leu | Ile | Ser | Pro | Pro | Ala | Ser | | |
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| Pro | Pro | Val | Gly | Trp | Lys | Gln | Val | Glu | Asp | Ala | Thr | Pro | Val | Ile | Asn | | |
| | | 115 | | | | | 120 | | | | | 125 | | | | | |
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| Tyr | Asp | Leu | Leu | Tyr | Ala | Ile | Ser | Lys | Leu | Gly | Pro | Gly | Glu | Lys | Tyr | | |
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| Education (years) | 12.5 ± 0.5 |
| Occupation (white/blue) | 10/10 |
| Marital status (married/divorced/widowed) | 10/10/0 |
| Smoking status (smoker/nonsmoker) | 10/10 |
| Alcohol consumption (yes/no) | 10/10 |
| Comorbidities (hypertension/diabetes/cholesterol) | 10/10/10 |
| Medication (antihypertensive/antidiabetic/anticholesterol) | 10/10/10 |
| Family history (hypertension/diabetes/cholesterol) | 10/10/10 |
| Physical activity (yes/no) | 10/10 |
| Stress level (low/moderate/high) | 10/10/10 |
| Social support (yes/no) | 10/10 |
| Quality of life (yes/no) | 10/10 |
| Health status (good/fair/poor) | 10/10/10 |
| Life expectancy (years) | 12.5 ± 0.5 |
| Life expectancy (months) | 150 ± 6 |
| Life expectancy (days) | 1800 ± 72 |
| Life expectancy (hours) | 43200 ± 1728 |
| Life expectancy (minutes) | 259200 ± 103680 |
| Life expectancy (seconds) | 15552000 ± 6220800 |
| Life expectancy (milliseconds) | 155520000 ± 62208000 |
| Life expectancy (microseconds) | 1555200000 ± 622080000 |
| Life expectancy (nanoseconds) | 15552000000 ± 6220800000 |
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| agc aac ccc ttc tcc gca gca gat gcc agg ctc cag ctg cat aag act | Ser Asn Pro Phe Ser Ala Ala Asp Ala Arg Leu Gln Leu His Lys Thr | 60 | 65 | 70 | 365 | |
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| agc gtg gtg gtc cat gta tgt gag agt gat caa gag aag gag gaa gaa | Ser Val Val Val His Val Cys Glu Ser Asp Gln Glu Lys Glu Glu Glu | 155 | 160 | 165 | 653 | |
| gag gaa atg gaa aga atg agg aga cct aag oca aaa att atc cag acc | Glu Glu Met Glu Arg Met Arg Arg Pro Lys Pro Lys Ile Ile Gln Thr | 175 | 180 | 185 | 701 | |
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ctggaagctc ttcccttcac tcccaactct gaggttgcct aactctttat taaaaattca 180
gaaggggggaa tgccagcccc tagc atg gac tgt gat gtt tcc act ctg gtt 231
Met Asp Cys Asp Val Ser Thr Leu Val
1 5
gcc tgt gtg gtg gat gtc gag gtc ttt acc aat cag gag gtt aag gaa 279
Ala Cys Val Val Asp Val Glu Val Phe Thr Asn Gln Glu Val Lys Glu
10 15 20 25
aaa ttt ggg gga ctg ttt cgg act tat gat gac tgt gtg acg ttc cag 327
Lys Phe Gly Gly Leu Phe Arg Thr Tyr Asp Asp Cys Val Thr Phe Gln
30 35 40
cta ttt aag agt ttc aga cgt gtc cgt ata aac ttc agc aat cct aaa 375
Leu Phe Lys Ser Phe Arg Arg Val Arg Ile Asn Phe Ser Asn Pro Lys
45 50 55
tct gca gcc cga gct agg ata gag ctt cat gaa acc caa ttc aga ggg 423
Ser Ala Ala Arg Ala Arg Ile Glu Leu His Glu Thr Gln Phe Arg Gly
60 65 70
aaa aaa tta aag ctc tac ttt gca cag gtt cag act cca gag aca gat 471
Lys Lys Leu Lys Leu Tyr Phe Ala Gln Val Gln Thr Pro Glu Thr Asp
75 80 85

gatgtttttt atttagtgat tgttcgacaa ttagctgctt caaaacataa tgtgcattgc 1710
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 aatgctgaat tttgaaagga cacaaaacat ctaatgccaa tatatacatg gttagccaac 1830
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 gggatgaagc taaatcccca gaatgcagca gcagctgagc atgttaaaat ggggaaggat 1950
 gatagctaca tgtatgcogg tctactcac gcgacaccg tgtgtcmeta aaagttactt 2010
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 <211> 192
 <212> PRT
 <213> Homo sapiens

<400> 18

Met Asp Cys Asp Val Ser Thr Leu Val Ala Cys Val Val Asp Val Glu
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Val Phe Thr Asn Gln Glu Val Lys Glu Lys Phe Gly Gly Leu Phe Arg
20 25 30

Thr Tyr Asp Asp Cys Val Thr Phe Gln Leu Phe Lys Ser Phe Arg Arg
35 40 45

Val Arg Ile Asn Phe Ser Asn Pro Lys Ser Ala Ala Arg Ala Arg Ile
50 55 60

Glu Leu His Glu Thr Gln Phe Arg Gly Lys Lys Leu Lys Leu Tyr Phe
65 70 75 80

Ala Gln Val Gln Thr Pro Glu Thr Asp Gly Asp Lys Leu His Leu Ala
85 90 95

Pro Pro Gln Pro Ala Lys Gln Phe Leu Ile Ser Pro Pro Ser Ser Pro
100 105 110

Pro Val Ser Trp Gln Pro Ile Asn Asp Ala Thr Pro Val Leu Asn Tyr
115 120 125

Asp Leu Leu Tyr Ala Val Ala Lys Leu Gly Pro Gly Glu Lys Tyr Glu
130 135 140

Leu His Ala Gly Thr Glu Ser Thr Pro Ser Val Val Val His Val Cys
145 150 155 160

Asp Ser Asp Ile Glu Glu Glu Glu Asp Pro Lys Thr Ser Pro Lys Pro
165 170 175

Lys Ile Ile Gln Thr Arg Arg Pro Gly Leu Pro Pro Ser Val Ser Asn
180 185 190

<210> 19

<211> 192

<212> PRT

<213> Homo sapiens

<400> 19

Met Asp Cys Asp Val Ser Thr Leu Val Ala Cys Val Val Asp Val Glu
1 5 10 15

Val Phe Thr Asn Gln Glu Val Lys Glu Lys Phe Gly Gly Leu Phe Arg
20 25 30

Thr Tyr Asp Asp Cys Val Thr Phe Gln Leu Phe Lys Ser Phe Arg Arg
35 40 45

Val Arg Ile Asn Phe Ser Asn Pro Lys Ser Ala Ala Arg Ala Arg Ile
50 55 60

Glu Leu His Glu Thr Gln Phe Arg Gly Lys Lys Leu Lys Leu Tyr Phe
65 70 75 80

Ala Gln Val Gln Thr Pro Glu Thr Asp Gly Asp Lys Leu His Leu Ala
85 90 95

Pro Pro Gln Pro Ala Lys Gln Phe Leu Ile Ser Pro Pro Ser Ser Pro
100 105 110

Pro Val Ser Trp Gln Pro Ile Asn Asp Ala Thr Pro Val Leu Asn Tyr
115 120 125

Asp Leu Leu Tyr Ala Val Ala Lys Leu Gly Pro Gly Glu Lys Tyr Glu
130 135 140

Leu His Ala Gly Thr Glu Ser Thr Pro Ser Val Val Val His Val Cys
145 150 155 160

Asp Ser Asp Ile Glu Glu Glu Glu Asp Pro Lys Thr Ser Pro Lys Pro
165 170 175

Lys Ile Ile Gln Thr Arg Arg Pro Gly Leu Pro Pro Ser Val Ser Asn
180 185 190

<210> 20
<211> 828
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (23)..(745)

<400> 20
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gat agc cag tca gat ctg tgt agc act gac caa gaa gag gaa gaa gag 100
Asp Ser Gln Ser Asp Leu Cys Ser Thr Asp Gln Glu Glu Glu Glu Glu
15 20 25

atg att ttt ggt gaa aat gaa gat gat ttg gat gag atg atg gat tta 148
Met Ile Phe Gly Glu Asn Glu Asp Asp Leu Asp Glu Met Met Asp Leu
30 35 40

agt gat ctg cct acc tca ctt ttt gct tgc agc gtc cat gaa gca gtg 196
Ser Asp Leu Pro Thr Ser Leu Phe Ala Cys Ser Val His Glu Ala Val
45 50 55

ttt gag gca cga gag cag aag gaa aga ttt gaa gca ctc ttc acc atc 244
Phe Glu Ala Arg Glu Gln Lys Glu Arg Phe Glu Ala Leu Phe Thr Ile

1661009.1

| 60 | 65 | 70 | |
|---|-----|-----|-----|
| tat gat gac cag gtt act ttt cag ctg ttt aaa agc ttt aga aga gtc | | | 292 |
| Tyr Asp Asp Gln Val Thr Phe Gln Leu Phe Lys Ser Phe Arg Arg Val | | | |
| 75 | 80 | 85 | 90 |
| aga ata aat ttc agc aaa cct gaa gcg gca gca aga gcg cga ata gaa | | | 340 |
| Arg Ile Asn Phe Ser Lys Pro Glu Ala Ala Ala Arg Ala Arg Ile Glu | | | |
| | 95 | 100 | 105 |
| ctc cac gaa aca gac ttc aat ggg cag aag cta aag cta tat ttt gca | | | 388 |
| Leu His Glu Thr Asp Phe Asn Gly Gln Lys Leu Lys Leu Tyr Phe Ala | | | |
| | 110 | 115 | 120 |
| cag gtg cag atg tcc ggc gaa gtg cgg gac aag tcc tat ctc ctg ccg | | | 436 |
| Gln Val Gln Met Ser Gly Glu Val Arg Asp Lys Ser Tyr Leu Leu Pro | | | |
| | 125 | 130 | 135 |
| ccc cag cct gtc aag cag ttc ctc atc tcc cct cca gcc tct ccc cca | | | 484 |
| Pro Gln Pro Val Lys Gln Phe Leu Ile Ser Pro Pro Ala Ser Pro Pro | | | |
| | 140 | 145 | 150 |
| gtg ggg tgg aag cag agc gaa gat gcg atg cct gtt ata aat tat gat | | | 532 |
| Val Gly Trp Lys Gln Ser Glu Asp Ala Met Pro Val Ile Asn Tyr Asp | | | |
| | 155 | 160 | 165 |
| tta ctc tgt gct gtt tcc aaa ttg gga cca gga gag aaa tat gaa ctt | | | 580 |
| Leu Leu Cys Ala Val Ser Lys Leu Gly Pro Gly Glu Lys Tyr Glu Leu | | | |
| | 175 | 180 | 185 |
| cac gcg gga aca gag tcg aca ccc agc gtg gtg gtt cat gtc tgt gaa | | | 628 |
| His Ala Gly Thr Glu Ser Thr Pro Ser Val Val Val His Val Cys Glu | | | |
| | 190 | 195 | 200 |
| agt gaa act gaa gag gaa gaa gag aca aaa aac ccc aaa cag aaa att | | | 676 |
| Ser Glu Thr Glu Glu Glu Glu Glu Thr Lys Asn Pro Lys Gln Lys Ile | | | |
| | 205 | 210 | 215 |
| gcc cag aca agg cgc ccc gac cct ccg acc gca gcg ttg aat gag ccc | | | 724 |
| Ala Gln Thr Arg Arg Pro Asp Pro Pro Thr Ala Ala Leu Asn Glu Pro | | | |
| | 220 | 225 | 230 |
| cag acc ttt gat tgc gcg ctg tgaggccctt gggtgtggtg cgaggcggct | | | 775 |
| Gln Thr Phe Asp Cys Ala Leu | | | |
| | 235 | 240 | |
| gccctggtgg gctctggcca tggcgcctctg tgccctgcggc cgatgcgttg ctg | | | 828 |

<210> 21
<211> 241
<212> PRT
<213> Homo sapiens

<400> 21
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Cys Ser Thr Asp Gln Glu Glu Glu Glu Met Ile Phe Gly Glu Asn
 20 25 30
 Glu Asp Asp Leu Asp Glu Met Met Asp Leu Ser Asp Leu Pro Thr Ser
 35 40 45
 Leu Phe Ala Cys Ser Val His Glu Ala Val Phe Glu Ala Arg Glu Gln
 50 55 60
 Lys Glu Arg Phe Glu Ala Leu Phe Thr Ile Tyr Asp Asp Gln Val Thr
 65 70 75 80
 Phe Gln Leu Phe Lys Ser Phe Arg Arg Val Arg Ile Asn Phe Ser Lys
 85 90 95
 Pro Glu Ala Ala Ala Arg Ala Arg Ile Glu Leu His Glu Thr Asp Phe
 100 105 110
 Asn Gly Gln Lys Leu Lys Leu Tyr Phe Ala Gln Val Gln Met Ser Gly
 115 120 125
 Glu Val Arg Asp Lys Ser Tyr Leu Leu Pro Pro Gln Pro Val Lys Gln
 130 135 140
 Phe Leu Ile Ser Pro Pro Ala Ser Pro Pro Val Gly Trp Lys Gln Ser
 145 150 155 160
 Glu Asp Ala Met Pro Val Ile Asn Tyr Asp Leu Leu Cys Ala Val Ser
 165 170 175
 Lys Leu Gly Pro Gly Glu Lys Tyr Glu Leu His Ala Gly Thr Glu Ser
 180 185 190
 Thr Pro Ser Val Val Val His Val Cys Glu Ser Glu Thr Glu Glu Glu
 195 200 205
 Glu Glu Thr Lys Asn Pro Lys Gln Lys Ile Ala Gln Thr Arg Arg Pro
 210 215 220
 Asp Pro Pro Thr Ala Ala Leu Asn Glu Pro Gln Thr Phe Asp Cys Ala
 225 230 235 240
 Leu

<210> 22
 <211> 241
 <212> PRT
 <213> Homo sapiens

<400> 22
 Met Leu Arg Asp Thr Met Lys Ser Trp Asn Asp Ser Gln Ser Asp Leu
 1 5 10 15

Cys Ser Thr Asp Gln Glu Glu Glu Glu Met Ile Phe Gly Glu Asn
 20 25 30
 Glu Asp Asp Leu Asp Glu Met Met Asp Leu Ser Asp Leu Pro Thr Ser
 35 40 45
 Leu Phe Ala Cys Ser Val His Glu Ala Val Phe Glu Ala Arg Glu Gln
 50 55 60
 Lys Glu Arg Phe Glu Ala Leu Phe Thr Ile Tyr Asp Asp Gln Val Thr
 65 70 75 80
 Phe Gln Leu Phe Lys Ser Phe Arg Arg Val Arg Ile Asn Phe Ser Lys
 85 90 95
 Pro Glu Ala Ala Ala Arg Ala Arg Ile Glu Leu His Glu Thr Asp Phe
 100 105 110
 Asn Gly Gln Lys Leu Lys Leu Tyr Phe Ala Gln Val Gln Met Ser Gly
 115 120 125
 Glu Val Arg Asp Lys Ser Tyr Leu Leu Pro Pro Gln Pro Val Lys Gln
 130 135 140
 Phe Leu Ile Ser Pro Pro Ala Ser Pro Pro Val Gly Trp Lys Gln Ser
 145 150 155 160
 Glu Asp Ala Met Pro Val Ile Asn Tyr Asp Leu Leu Cys Ala Val Ser
 165 170 175
 Lys Leu Gly Pro Gly Glu Lys Tyr Glu Leu His Ala Gly Thr Glu Ser
 180 185 190
 Thr Pro Ser Val Val Val His Val Cys Glu Ser Glu Thr Glu Glu Glu
 195 200 205
 Glu Glu Thr Lys Asn Pro Lys Gln Lys Ile Ala Gln Thr Arg Arg Pro
 210 215 220
 Asp Pro Pro Thr Ala Ala Leu Asn Glu Pro Gln Thr Phe Asp Cys Ala
 225 230 235 240
 Leu

<210> 23
 <211> 720
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (2)..(637)

<400> 23
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|------------|------------|-------------|------------|------------|-------------|------------|-----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Gln | Glu | Glu | Glu | Glu | Glu | Met | Ile | Phe | Gly | Glu | Asn | Glu | Asp | Asp | |
| 1 | | | | | 5 | | | | 10 | | | | | 15 | | |
| ttg | gat | gag | atg | atg | gat | tta | agt | gat | ctg | cct | acc | tca | ctt | ttt | gct | 97 |
| Leu | Asp | Glu | Met | Met | Asp | Leu | Ser | Asp | Leu | Pro | Thr | Ser | Leu | Phe | Ala | |
| | | 20 | | | | | | 25 | | | | | 30 | | | |
| tgc | agc | gtc | cat | gaa | gca | gtg | ttt | gag | gca | cga | gag | cag | aag | gaa | aga | 145 |
| Cys | Ser | Val | His | Glu | Ala | Val | Phe | Glu | Ala | Arg | Glu | Gln | Lys | Glu | Arg | |
| | | 35 | | | | | 40 | | | | | 45 | | | | |
| ttt | gaa | gca | ctc | ttc | acc | atc | tat | gat | gac | cag | gtt | act | ttt | cag | ctg | 193 |
| Phe | Glu | Ala | Leu | Phe | Thr | Ile | Tyr | Asp | Asp | Gln | Val | Thr | Phe | Gln | Leu | |
| | 50 | | | | | 55 | | | | | 60 | | | | | |
| ttt | aaa | agc | ttt | aga | aga | gtc | aga | ata | aat | ttc | agc | aaa | cct | gaa | gcg | 241 |
| Phe | Lys | Ser | Phe | Arg | Arg | Val | Arg | Ile | Asn | Phe | Ser | Lys | Pro | Glu | Ala | |
| | 65 | | | | 70 | | | | 75 | | | | | 80 | | |
| gca | gca | aga | gcg | cga | ata | gaa | ctc | cac | gaa | aca | gac | ttc | aat | ggg | cag | 289 |
| Ala | Ala | Arg | Ala | Arg | Ile | Glu | Leu | His | Glu | Thr | Asp | Phe | Asn | Gly | Gln | |
| | | | | 85 | | | | 90 | | | | | | 95 | | |
| aag | cta | aag | cta | tat | ttt | gca | cag | tcc | tat | ctc | ctg | ccg | ccc | cag | cct | 337 |
| Lys | Leu | Lys | Leu | Tyr | Phe | Ala | Gln | Ser | Tyr | Leu | Leu | Pro | Pro | Gln | Pro | |
| | | | 100 | | | | | 105 | | | | | 110 | | | |
| gtc | aag | cag | ttc | ctc | atc | tcc | cct | cca | gcc | tct | ccc | cca | gtg | ggg | tgg | 385 |
| Val | Lys | Gln | Phe | Leu | Ile | Ser | Pro | Pro | Ala | Ser | Pro | Pro | Val | Gly | Trp | |
| | | 115 | | | | | 120 | | | | | 125 | | | | |
| aag | cag | agc | gaa | gat | gcg | atg | cct | gtt | ata | aat | tat | gat | tta | ctc | tgt | 433 |
| Lys | Gln | Ser | Glu | Asp | Ala | Met | Pro | Val | Ile | Asn | Tyr | Asp | Leu | Leu | Cys | |
| | 130 | | | | | 135 | | | | | 140 | | | | | |
| gct | gtt | tcc | aaa | ttg | gga | cca | gga | gag | aaa | tat | gaa | ctt | cac | gcg | gga | 481 |
| Ala | Val | Ser | Lys | Leu | Gly | Pro | Gly | Glu | Lys | Tyr | Glu | Leu | His | Ala | Gly | |
| | 145 | | | | 150 | | | | 155 | | | | | | 160 | |
| aca | gag | tcg | aca | ccc | agc | gtg | gtg | gtt | cat | gtc | tgt | gaa | agt | gaa | act | 529 |
| Thr | Glu | Ser | Thr | Pro | Ser | Val | Val | Val | His | Val | Cys | Glu | Ser | Glu | Thr | |
| | | | | 165 | | | | | 170 | | | | | 175 | | |
| gaa | gag | gaa | gaa | gag | aca | aaa | aac | ccc | aaa | cag | aaa | att | gcc | cag | aca | 577 |
| Glu | Glu | Glu | Glu | Glu | Thr | Lys | Asn | Pro | Lys | Gln | Lys | Ile | Ala | Gln | Thr | |
| | | | 180 | | | | | 185 | | | | | 190 | | | |
| agg | cgc | ccc | gac | cct | ccg | acc | gca | gcg | ttg | aat | gag | ccc | cag | acc | ttt | 625 |
| Arg | Arg | Pro | Asp | Pro | Pro | Thr | Ala | Ala | Leu | Asn | Glu | Pro | Gln | Thr | Phe | |
| | | 195 | | | | | 200 | | | | | 205 | | | | |
| gat | tgc | gcg | ctg | tgaggccctt | ggttggtggtg | cgaggcggtg | gcctggttg | | | | | | | | | 677 |
| Asp | Cys | Ala | Leu | | | | | | | | | | | | | |
| | | | 210 | | | | | | | | | | | | | |
| gctctggcca | tggcgctctg | tgccctgcggc | cgatgcgttg | ctg | | | | | | | | | | | | 720 |

<210> 24
 <211> 212
 <212> PRT
 <213> Homo sapiens

<400> 24
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 20 25 30
 Cys Ser Val His Glu Ala Val Phe Glu Ala Arg Glu Gln Lys Glu Arg
 35 40 45
 Phe Glu Ala Leu Phe Thr Ile Tyr Asp Asp Gln Val Thr Phe Gln Leu
 50 55 60
 Phe Lys Ser Phe Arg Arg Val Arg Ile Asn Phe Ser Lys Pro Glu Ala
 65 70 75 80
 Ala Ala Arg Ala Arg Ile Glu Leu His Glu Thr Asp Phe Asn Gly Gln
 85 90 95
 Lys Leu Lys Leu Tyr Phe Ala Gln Ser Tyr Leu Leu Pro Pro Gln Pro
 100 105 110
 Val Lys Gln Phe Leu Ile Ser Pro Pro Ala Ser Pro Pro Val Gly Trp
 115 120 125
 Lys Gln Ser Glu Asp Ala Met Pro Val Ile Asn Tyr Asp Leu Leu Cys
 130 135 140
 Ala Val Ser Lys Leu Gly Pro Gly Glu Lys Tyr Glu Leu His Ala Gly
 145 150 155 160
 Thr Glu Ser Thr Pro Ser Val Val Val His Val Cys Glu Ser Glu Thr
 165 170 175
 Glu Glu Glu Glu Glu Thr Lys Asn Pro Lys Gln Lys Ile Ala Gln Thr
 180 185 190
 Arg Arg Pro Asp Pro Pro Thr Ala Ala Leu Asn Glu Pro Gln Thr Phe
 195 200 205
 Asp Cys Ala Leu
 210

<210> 25
 <211> 212
 <212> PRT
 <213> Homo sapiens

<400> 25

Asp Gln Glu Glu Glu Glu Met Ile Phe Gly Glu Asn Glu Asp Asp
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 Leu Asp Glu Met Met Asp Leu Ser Asp Leu Pro Thr Ser Leu Phe Ala
 20 25 30
 Cys Ser Val His Glu Ala Val Phe Glu Ala Arg Glu Gln Lys Glu Arg
 35 40 45
 Phe Glu Ala Leu Phe Thr Ile Tyr Asp Asp Gln Val Thr Phe Gln Leu
 50 55 60
 Phe Lys Ser Phe Arg Arg Val Arg Ile Asn Phe Ser Lys Pro Glu Ala
 65 70 75 80
 Ala Ala Arg Ala Arg Ile Glu Leu His Glu Thr Asp Phe Asn Gly Gln
 85 90 95
 Lys Leu Lys Leu Tyr Phe Ala Gln Ser Tyr Leu Leu Pro Pro Gln Pro
 100 105 110
 Val Lys Gln Phe Leu Ile Ser Pro Pro Ala Ser Pro Pro Val Gly Trp
 115 120 125
 Lys Gln Ser Glu Asp Ala Met Pro Val Ile Asn Tyr Asp Leu Leu Cys
 130 135 140
 Ala Val Ser Lys Leu Gly Pro Gly Glu Lys Tyr Glu Leu His Ala Gly
 145 150 155 160
 Thr Glu Ser Thr Pro Ser Val Val Val His Val Cys Glu Ser Glu Thr
 165 170 175
 Glu Glu Glu Glu Glu Thr Lys Asn Pro Lys Gln Lys Ile Ala Gln Thr
 180 185 190
 Arg Arg Pro Asp Pro Pro Thr Ala Ala Leu Asn Glu Pro Gln Thr Phe
 195 200 205
 Asp Cys Ala Leu
 210

<210> 26
 <211> 1039
 <212> DNA
 <213> Homo sapiens

<400> 26
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 cagggacaaa gtgtaagttt ctactggaaa gaggtgacgt caacacctta gtcattttcc 180
 ctatgctaataa taactttgct tggggagaat ggaaaaaaca gctgaggttt gctccacagc 240
 atcctgtttg gacagcaaat tcttgagtca agtcctgcat gottgcaggc agacagggac 300
 aaagtgtgaag tttctactgg aaagaggtga cgtcaacacc ttagtcattt tccctatgct 360
 aattaacttt gcttggggag aatggaaaaa acagctgagg tttgcttcac agctgcttta 420
 tcaacctctc ttgcagcata gtttcactg gtagtaattc cattcagcta ctacagacaac 480

| | | | | | | |
|------------|------------|-------------|------------|------------|------------|------|
| acgctcctcg | gccgaatggg | acgacccttc | ttaagatgga | aaatgttaca | aaagaaaaag | 540 |
| gatgaaggtc | tgtggcaata | aacagcaatt | agactgtagg | gaaatttcaa | ggctttggga | 600 |
| aacctggaaa | ccaaagtccg | ggtgacatac | ttgatccctg | gaatttcctg | aaaacctcaa | 660 |
| tcaaagtttc | actttggggg | attagagaaa | acattttgaa | atctgtcttg | gtcaataaaa | 720 |
| attttaaagg | acaaaaagag | gaatcatttt | gaagtgtagt | taaaattttt | ttccccagtg | 780 |
| acattttatt | ggatgaatgt | cccaatttct | acttgtatcc | cacagtggaa | tggagcaaac | 840 |
| agaacctaaa | acaatcctag | gatttttcatt | tgaaaacttc | attattataa | tttgagaact | 900 |
| ggggatatga | aacacttcga | tcattttcaa | agcactactg | aattcaggca | aaggatacaa | 960 |
| aaacactagc | ctttgaaact | gagcaatcta | gcctttgaaa | ctgagcaaag | aagcattaac | 1020 |
| ccatttatgc | cagaggttg | | | | | 1039 |

<210> 27
 <211> 853
 <212> DNA
 <213> Homo sapiens

<400> 27

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| tgaaaatgat | cgaagtgttt | catatcccca | gttctcaa | tataataatg | aagttttcaa | 120 |
| atgaaaatcc | taggattggt | ttaggttctg | tttgtccat | tccactgtgg | gatacaagta | 180 |
| gaaattggga | cattcatcca | ataaaatgtc | actggggaaa | aaaattttta | ctacacttca | 240 |
| aaatgattcc | tctttttgtc | ctttaaaatt | tttattgacc | aagacagatt | tcaaaatggt | 300 |
| ttctctaata | ccccaaagtg | aaactttgat | tgaggttttc | aggaaattcc | agggatcaag | 360 |
| tatgtcaccc | ggactttggg | ttccagggtt | cccaaagtct | tgaaattttc | ctacagtcta | 420 |
| attgctgttt | attgocacag | accttcatcc | tttttctttt | gtaacatttt | ccatcttaag | 480 |
| aagggtcgtc | ccattoggcc | gaggagcgtg | ttgtctgagt | agctgaatgg | aattactacg | 540 |
| agtggaaaact | atgctgcaag | agaggttgat | aaagcagctg | tgaagcaaac | ctcagctggt | 600 |
| ttttccattc | tccccaaagca | aagttaatta | gcatagggaa | aatgactaag | gtgttgacgt | 660 |
| cacctctttc | cagtagaaac | ttacactttg | tccctgtcta | cctgcaagca | tgcaggactt | 720 |
| gactcaggaa | tttgcgtgtc | aaacagggat | ctgtggaagc | tgcacttttt | ttttcccag | 780 |
| ggagtggggg | ctggccctta | ctgctttata | agcaccagct | caagaaggaa | cctacagcct | 840 |
| cttggaagg | aat | | | | | 853 |

SEQUENCE LISTING

<110> WILLIAMS, R. SANDERS
ROTHERMEL, BEVERLY

<120> METHODS AND COMPOSITIONS RELATING TO MUSCLE SELECTIVE
CALCINEURIN INTERACTING PROTEIN (MCIP)

<130> UTSD:674US

<140> UNKNOWN

<141> 2001-02-13

<150> 60/216,601

<151> 2000-07-07

<160> 27

<170> PatentIn Ver. 2.1

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| cac ctg gac ccg cgc gtg ttc gtg gac ggc ctg tgc cgg gcc aaa ttt | 96 |
| His Leu Asp Pro Arg Val Phe Val Asp Gly Leu Cys Arg Ala Lys Phe | |
| 20 25 30 | |
| gaa tcc ctc ttc aga aca tat gac aag gac acc acc ttc cag tat ttt | 144 |
| Glu Ser Leu Phe Arg Thr Tyr Asp Lys Asp Thr Thr Phe Gln Tyr Phe | |
| 35 40 45 | |
| aag agc ttc aaa cgt gtc cgg ata aac ttc agc aac ccc tta tct gca | 192 |
| Lys Ser Phe Lys Arg Val Arg Ile Asn Phe Ser Asn Pro Leu Ser Ala | |
| 50 55 60 | |
| gcc gat gcc agg ctg cgg ctg cac aag acc gag ttc ctg ggg aag gaa | 240 |
| Ala Asp Ala Arg Leu Arg Leu His Lys Thr Glu Phe Leu Gly Lys Glu | |
| 65 70 75 80 | |
| atg aag ttg tat ttt gct cag act tta cac ata gga agt tca cac ctg | 288 |
| Met Lys Leu Tyr Phe Ala Gln Thr Leu His Ile Gly Ser Ser His Leu | |
| 85 90 95 | |
| gct ccg ccc aat ccc gac aaa cag ttc ctc atc tcc cct ccg gcc tct | 336 |
| Ala Pro Pro Asn Pro Asp Lys Gln Phe Leu Ile Ser Pro Pro Ala Ser | |
| 100 105 110 | |
| cct ccc gtt ggc tgg aaa caa gta gaa gat gcc acc ccc gtc ata aat | 384 |
| Pro Pro Val Gly Trp Lys Gln Val Glu Asp Ala Thr Pro Val Ile Asn | |
| 115 120 125 | |
| tac gat ctt tta tat gcc atc tcc aag ctg ggg cca gga gag aag tat | 432 |
| Tyr Asp Leu Leu Tyr Ala Ile Ser Lys Leu Gly Pro Gly Glu Lys Tyr | |
| 130 135 140 | |
| gaa ctg cat gca gcg aca gac ccc act ccc agt gtg gtg gtc cac gtg | 480 |
| Glu Leu His Ala Ala Thr Asp Pro Thr Pro Ser Val Val Val His Val | |
| 145 150 155 160 | |
| tgt gag agt gac caa gag aat gag gag gaa gag gaa gag atg gag aga | 528 |
| Cys Glu Ser Asp Gln Glu Asn Glu Glu Glu Glu Glu Glu Met Glu Arg | |
| 165 170 175 | |
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35 40 45

Lys Ser Phe Lys Arg Val Arg Ile Asn Phe Ser Asn Pro Leu Ser Ala
50 55 60

Ala Asp Ala Arg Leu Arg Leu His Lys Thr Glu Phe Leu Gly Lys Glu
65 70 75 80

Met Lys Leu Tyr Phe Ala Gln Thr Leu His Ile Gly Ser Ser His Leu
85 90 95

Ala Pro Pro Asn Pro Asp Lys Gln Phe Leu Ile Ser Pro Pro Ala Ser
100 105 110

Pro Pro Val Gly Trp Lys Gln Val Glu Asp Ala Thr Pro Val Ile Asn
115 120 125

Tyr Asp Leu Leu Tyr Ala Ile Ser Lys Leu Gly Pro Gly Glu Lys Tyr
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Glu Leu His Ala Ala Thr Asp Pro Thr Pro Ser Val Val Val His Val
145 150 155 160

Cys Glu Ser Asp Gln Glu Asn Glu Glu Glu Glu Glu Glu Met Glu Arg
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Thr Pro Ile His Leu Ser

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 35 40 45

Lys Ser Phe Lys Arg Val Arg Ile Asn Phe Ser Asn Pro Leu Ser Ala
 50 55 60

Ala Asp Ala Arg Leu Arg Leu His Lys Thr Glu Phe Leu Gly Lys Glu
 65 70 75 80

Met Lys Leu Tyr Phe Ala Gln Thr Leu His Ile Gly Ser Ser His Leu
 85 90 95

Ala Pro Pro Asn Pro Asp Lys Gln Phe Leu Ile Ser Pro Pro Ala Ser
 100 105 110

Pro Pro Val Gly Trp Lys Gln Val Glu Asp Ala Thr Pro Val Ile Asn
 115 120 125

Tyr Asp Leu Leu Tyr Ala Ile Ser Lys Leu Gly Pro Gly Glu Lys Tyr
 130 135 140

Glu Leu His Ala Ala Thr Asp Pro Thr Pro Ser Val Val Val His Val
 145 150 155 160

Cys Glu Ser Asp Gln Glu Asn Glu Glu Glu Glu Glu Met Glu Arg
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Thr Pro Ile His Leu Ser
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 Val Ala Asn Asp Asp Val Phe Ser Glu Ser Glu Thr Arg Ala Lys Phe
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 gaa tcc ctc ttc aga aca tat gac aag gac acc acc ttc cag tat ttt 144
 Glu Ser Leu Phe Arg Thr Tyr Asp Lys Asp Thr Thr Phe Gln Tyr Phe
 35 40 45
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 Lys Ser Phe Lys Arg Val Arg Ile Asn Phe Ser Asn Pro Leu Ser Ala
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 gcc gat gcc agg ctg cgg ctg cac aag acc gag ttc ctg ggg aag gaa 240
 Ala Asp Ala Arg Leu Arg Leu His Lys Thr Glu Phe Leu Gly Lys Glu
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 Met Lys Leu Tyr Phe Ala Gln Thr Leu His Ile Gly Ser Ser His Leu
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 Ala Pro Pro Asn Pro Asp Lys Gln Phe Leu Ile Ser Pro Pro Ala Ser
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 cct ccc gtt ggc tgg aaa caa gta gaa gat gcc acc ccc gtc ata aat 384
 Pro Pro Val Gly Trp Lys Gln Val Glu Asp Ala Thr Pro Val Ile Asn
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 tac gat ctt tta tat gcc atc tcc aag ctg ggg cca gga gag aag tat 432
 Tyr Asp Leu Leu Tyr Ala Ile Ser Lys Leu Gly Pro Gly Glu Lys Tyr
 130 135 140

130

135

140

Glu Leu His Ala Ala Thr Asp Pro Thr Pro Ser Val Val Val His Val
145 150 155 160

Cys Glu Ser Asp Gln Glu Asn Glu Glu Glu Glu Glu Glu Met Glu Arg
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35 40 45

Lys Ser Phe Lys Arg Val Arg Ile Asn Phe Ser Asn Pro Leu Ser Ala
50 55 60

Ala Asp Ala Arg Leu Arg Leu His Lys Thr Glu Phe Leu Gly Lys Glu
65 70 75 80

Met Lys Leu Tyr Phe Ala Gln Thr Leu His Ile Gly Ser Ser His Leu
85 90 95

Ala Pro Pro Asn Pro Asp Lys Gln Phe Leu Ile Ser Pro Pro Ala Ser
100 105 110

Pro Pro Val Gly Trp Lys Gln Val Glu Asp Ala Thr Pro Val Ile Asn
115 120 125

Tyr Asp Leu Leu Tyr Ala Ile Ser Lys Leu Gly Pro Gly Glu Lys Tyr
130 135 140

Glu Leu His Ala Ala Thr Asp Pro Thr Pro Ser Val Val Val His Val
145 150 155 160

Cys Glu Ser Asp Gln Glu Asn Glu Glu Glu Glu Glu Met Glu Arg
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Thr Pro Ile His Leu Ser
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gag gga ctg ttc cgg acc tat gat gaa tgt gtg acg ttc cag ctg ttt 144
Glu Gly Leu Phe Arg Thr Tyr Asp Glu Cys Val Thr Phe Gln Leu Phe
35 40 45

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Lys Ser Phe Arg Arg Val Arg Ile Asn Phe Ser His Pro Lys Ser Ala
50 55 60

gcc cgt gcc cgg ata gag ctt cat gag act cag ttc aga ggg aag aag 240
Ala Arg Ala Arg Ile Glu Leu His Glu Thr Gln Phe Arg Gly Lys Lys
65 70 75 80

cta aaa ctc tac ttc gcc cag gtc cag acc cca gag aca gat gga gac 288
Leu Lys Leu Tyr Phe Ala Gln Val Gln Thr Pro Glu Thr Asp Gly Asp
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70

75

80

Leu Lys Leu Tyr Phe Ala Gln Val Gln Thr Pro Glu Thr Asp Gly Asp
85 90 95

Lys Leu His Leu Ala Pro Pro Gln Pro Ala Lys Gln Phe Leu Ile Ser
100 105 110

Pro Pro Ser Ser Pro Pro Val Gly Trp Lys Pro Ile Ser Asp Ala Thr
115 120 125

Pro Val Leu Asn Tyr Asp Leu Leu Tyr Ala Val Ala Lys Leu Gly Pro
130 135 140

Gly Glu Lys Tyr Glu Leu His Ala Gly Thr Glu Ser Thr Pro Ser Val
145 150 155 160

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Pro Ser Val Ser Asn
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Glu Gly Leu Phe Arg Thr Tyr Asp Glu Cys Val Thr Phe Gln Leu Phe
35 40 45

Lys Ser Phe Arg Arg Val Arg Ile Asn Phe Ser His Pro Lys Ser Ala
50 55 60

Ala Arg Ala Arg Ile Glu Leu His Glu Thr Gln Phe Arg Gly Lys Lys
65 70 75 80

Leu Lys Leu Tyr Phe Ala Gln Val Gln Thr Pro Glu Thr Asp Gly Asp
85 90 95

Lys Leu His Leu Ala Pro Pro Gln Pro Ala Lys Gln Phe Leu Ile Ser
100 105 110

Pro Pro Ser Ser Pro Pro Val Gly Trp Lys Pro Ile Ser Asp Ala Thr
115 120 125

Pro Val Leu Asn Tyr Asp Leu Leu Tyr Ala Val Ala Lys Leu Gly Pro
130 135 140

Gly Glu Lys Tyr Glu Leu His Ala Gly Thr Glu Ser Thr Pro Ser Val
145 150 155 160

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Pro Ser Val Ser Asn
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cgcttttact gtaagaaagc aag atg cat ttt aga aac ttt aac tac agt ttt 173

Met His Phe Arg Asn Phe Asn Tyr Ser Phe

1

5

10

agc tcc ctg att gcc tgt gtg gca aac agt gat atc ttc agc gaa agt 221

Ser Ser Leu Ile Ala Cys Val Ala Asn Ser Asp Ile Phe Ser Glu Ser

15

20

25

| Variable | Mean | SD | Min | Max |
|---------------------|------|------|-----|------|
| Age | 34.5 | 10.2 | 21 | 55 |
| Gender | 0.5 | 0.5 | 0 | 1 |
| Marital status | 0.6 | 0.5 | 0 | 1 |
| Education | 12.5 | 1.5 | 9 | 16 |
| Income | 1500 | 500 | 500 | 3000 |
| Health status | 0.8 | 0.2 | 0 | 1 |
| Smoking status | 0.3 | 0.5 | 0 | 1 |
| Alcohol consumption | 0.2 | 0.4 | 0 | 1 |
| Exercise frequency | 0.5 | 0.5 | 0 | 1 |
| Stress level | 0.7 | 0.3 | 0 | 1 |
| Sleep quality | 0.6 | 0.4 | 0 | 1 |
| Work satisfaction | 0.5 | 0.5 | 0 | 1 |
| Life satisfaction | 0.6 | 0.4 | 0 | 1 |
| Depression score | 0.3 | 0.5 | 0 | 1 |
| Anxiety score | 0.2 | 0.4 | 0 | 1 |
| Overall well-being | 0.5 | 0.5 | 0 | 1 |



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<211> 197

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Glu Ser Leu Phe Arg Thr Tyr Asp Lys Asp Ile Thr Phe Gln Tyr Phe
35 40 45

Lys Ser Phe Lys Arg Val Arg Ile Asn Phe Ser Asn Pro Phe Ser Ala
50 55 60

Ala Asp Ala Arg Leu Gln Leu His Lys Thr Glu Phe Leu Gly Lys Glu
65 70 75 80

Met Lys Leu Tyr Phe Ala Gln Thr Leu His Ile Gly Ser Ser His Leu
85 90 95

Ala Pro Pro Asn Pro Asp Lys Gln Phe Leu Ile Ser Pro Pro Ala Ser
100 105 110

Pro Pro Val Gly Trp Lys Gln Val Glu Asp Ala Thr Pro Val Ile Asn
115 120 125

Tyr Asp Leu Leu Tyr Ala Ile Ser Lys Leu Gly Pro Gly Glu Lys Tyr
130 135 140

Glu Leu His Ala Ala Thr Asp Thr Thr Pro Ser Val Val Val His Val
145 150 155 160

Cys Glu Ser Asp Gln Glu Lys Glu Glu Glu Glu Met Glu Arg Met
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Arg Arg Pro Lys Pro Lys Ile Ile Gln Thr Arg Arg Pro Glu Tyr Thr
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Pro Ile His Leu Ser
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 35 40 45
 Lys Ser Phe Lys Arg Val Arg Ile Asn Phe Ser Asn Pro Phe Ser Ala
 50 55 60
 Ala Asp Ala Arg Leu Gln Leu His Lys Thr Glu Phe Leu Gly Lys Glu
 65 70 75 80
 Met Lys Leu Tyr Phe Ala Gln Thr Leu His Ile Gly Ser Ser His Leu
 85 90 95
 Ala Pro Pro Asn Pro Asp Lys Gln Phe Leu Ile Ser Pro Pro Ala Ser
 100 105 110
 Pro Pro Val Gly Trp Lys Gln Val Glu Asp Ala Thr Pro Val Ile Asn
 115 120 125
 Tyr Asp Leu Leu Tyr Ala Ile Ser Lys Leu Gly Pro Gly Glu Lys Tyr
 130 135 140
 Glu Leu His Ala Ala Thr Asp Thr Thr Pro Ser Val Val Val His Val
 145 150 155 160
 Cys Glu Ser Asp Gln Glu Lys Glu Glu Glu Glu Glu Met Glu Arg Met
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 Pro Ile His Leu Ser
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Pro Ser Ala Thr Ile Ala Cys His Leu Asp Pro Arg Val Phe Val Asp
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Gly Leu Cys Arg Ala Lys Phe Glu Ser Leu Phe Arg Thr Tyr Asp Lys
30 35 40

gac atc acc ttt cag tat ttt aag agc ttc aaa cga gtc aga ata aac 195
Asp Ile Thr Phe Gln Tyr Phe Lys Ser Phe Lys Arg Val Arg Ile Asn
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Phe Ser Asn Pro Phe Ser Ala Ala Asp Ala Arg Leu Gln Leu His Lys
60 65 70

act gag ttt ctg gga aag gaa atg aag tta tat ttt gct cag acc tta 291
Thr Glu Phe Leu Gly Lys Glu Met Lys Leu Tyr Phe Ala Gln Thr Leu
75 80 85

cac ata gga agc tca cac ctg gct ccg cca aat cca gac aag cag ttt 339
His Ile Gly Ser Ser His Leu Ala Pro Pro Asn Pro Asp Lys Gln Phe
90 95 100 105

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Leu Ile Ser Pro Pro Ala Ser Pro Pro Val Gly Trp Lys Gln Val Glu
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Asp Ala Thr Pro Val Ile Asn Tyr Asp Leu Leu Tyr Ala Ile Ser Lys
125 130 135

ctg ggg cca ggg gaa aag tat gaa ttg cac gca gcg act gac acc act 483
Leu Gly Pro Gly Glu Lys Tyr Glu Leu His Ala Ala Thr Asp Thr Thr

140

145

150

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 Pro Ser Val Val Val His Val Cys Glu Ser Asp Gln Glu Lys Glu Glu
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 170 175 180 185

acc agg agg ccg gag tac acg ccg atc cac ctc agc tgaactggca 625
 Thr Arg Arg Pro Glu Tyr Thr Pro Ile His Leu Ser
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<212> PRT

<213> Homo sapiens

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| | | | | | | | | | | | | | | | |
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| Met | Glu | Glu | Val | Asp | Leu | Gln | Asp | Leu | Pro | Ser | Ala | Thr | Ile | Ala | Cys |
| 1 | | | | 5 | | | | | 10 | | | | | | 15 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Leu | Asp | Pro | Arg | Val | Phe | Val | Asp | Gly | Leu | Cys | Arg | Ala | Lys | Phe |
| | | | 20 | | | | | 25 | | | | | | 30 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Ser | Leu | Phe | Arg | Thr | Tyr | Asp | Lys | Asp | Ile | Thr | Phe | Gln | Tyr | Phe |
| | | 35 | | | | | 40 | | | | | 45 | | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Ser | Phe | Lys | Arg | Val | Arg | Ile | Asn | Phe | Ser | Asn | Pro | Phe | Ser | Ala |
| | 50 | | | | | 55 | | | | | 60 | | | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Asp | Ala | Arg | Leu | Gln | Leu | His | Lys | Thr | Glu | Phe | Leu | Gly | Lys | Glu |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Lys | Leu | Tyr | Phe | Ala | Gln | Thr | Leu | His | Ile | Gly | Ser | Ser | His | Leu |
| | | | | | 85 | | | | 90 | | | | | 95 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Pro | Pro | Asn | Pro | Asp | Lys | Gln | Phe | Leu | Ile | Ser | Pro | Pro | Ala | Ser |
| | | | 100 | | | | | 105 | | | | | | 110 | |

Pro Pro Val Gly Trp Lys Gln Val Glu Asp Ala Thr Pro Val Ile Asn
 115 120 125

Tyr Asp Leu Leu Tyr Ala Ile Ser Lys Leu Gly Pro Gly Glu Lys Tyr
 130 135 140

Glu Leu His Ala Ala Thr Asp Thr Thr Pro Ser Val Val Val His Val
 145 150 155 160

Cys Glu Ser Asp Gln Glu Lys Glu Glu Glu Glu Met Glu Arg Met
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Arg Arg Pro Lys Pro Lys Ile Ile Gln Thr Arg Arg Pro Glu Tyr Thr
 180 185 190

Pro Ile His Leu Ser
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<210> 16

<211> 197

<212> PRT

<213> Homo sapiens

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 20 25 30

Glu Ser Leu Phe Arg Thr Tyr Asp Lys Asp Ile Thr Phe Gln Tyr Phe
 35 40 45

Lys Ser Phe Lys Arg Val Arg Ile Asn Phe Ser Asn Pro Phe Ser Ala
 50 55 60

Ala Asp Ala Arg Leu Gln Leu His Lys Thr Glu Phe Leu Gly Lys Glu
 65 70 75 80

Met Lys Leu Tyr Phe Ala Gln Thr Leu His Ile Gly Ser Ser His Leu
 85 90 95

Ala Pro Pro Asn Pro Asp Lys Gln Phe Leu Ile Ser Pro Pro Ala Ser
 100 105 110

Pro Pro Val Gly Trp Lys Gln Val Glu Asp Ala Thr Pro Val Ile Asn

[illegible]

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ctggaagctc ttcccttcac tcccaactct gaggttgcc t aactctttat taaaaattca 180

gaaggggggaa tgccagcccc tagc atg gac tgt gat gtt tcc act ctg gtt 231

Met Asp Cys Asp Val Ser Thr Leu Val

1

5

gcc tgt gtg gtg gat gtc gag gtc ttt acc aat cag gag gtt aag gaa 279

Ala Cys Val Val Asp Val Glu Val Phe Thr Asn Gln Glu Val Lys Glu

10

15

20

25

aaa ttt ggg gga ctg ttt cgg act tat gat gac tgt gtg acg ttc cag 327

Lys Phe Gly Gly Leu Phe Arg Thr Tyr Asp Asp Cys Val Thr Phe Gln

30

35

40

cta ttt aag agt ttc aga cgt gtc cgt ata aac ttc agc aat cct aaa 375

Leu Phe Lys Ser Phe Arg Arg Val Arg Ile Asn Phe Ser Asn Pro Lys

45

50

55

tct gca gcc cga gct agg ata gag ctt cat gaa acc caa ttc aga ggg 423
 Ser Ala Ala Arg Ala Arg Ile Glu Leu His Glu Thr Gln Phe Arg Gly
 60 65 70

aaa aaa tta aag ctc tac ttt gca cag gtt cag act cca gag aca gat 471
 Lys Lys Leu Lys Leu Tyr Phe Ala Gln Val Gln Thr Pro Glu Thr Asp
 75 80 85

gga gac aaa ctg cac ttg gct cca ccc cag cct gcc aaa cag ttt ctc 519
 Gly Asp Lys Leu His Leu Ala Pro Pro Gln Pro Ala Lys Gln Phe Leu
 90 95 100 105

atc tcg ccc cct tcc tcc cca cct gtt agc tgg cag ccc atc aac gat 567
 Ile Ser Pro Pro Ser Ser Pro Pro Val Ser Trp Gln Pro Ile Asn Asp
 110 115 120

gcc acg cca gtc ctc aac tat gac ctc ctc tat gct gtg gcc aaa cta 615
 Ala Thr Pro Val Leu Asn Tyr Asp Leu Leu Tyr Ala Val Ala Lys Leu
 125 130 135

gga cca gga gag aag tat gag ctc cat gca ggg act gag tcc acc cca 663
 Gly Pro Gly Glu Lys Tyr Glu Leu His Ala Gly Thr Glu Ser Thr Pro
 140 145 150

agt gtc gtc gtg cac gtg tgc gac agt gac ata gag gaa gaa gag gac 711
 Ser Val Val Val His Val Cys Asp Ser Asp Ile Glu Glu Glu Glu Asp
 155 160 165

cca aag act tcc cca aag cca aaa atc atc caa act cgg cgt cct ggc 759
 Pro Lys Thr Ser Pro Lys Pro Lys Ile Ile Gln Thr Arg Arg Pro Gly
 170 175 180 185

ctg cca ccc tcc gtg tcc aac tgagctgcct gctccttctc gataatagcc 810
 Leu Pro Pro Ser Val Ser Asn
 190

gtctcctctt tatcatgctt tttccccctg ttgtttgtca aaaaaaattg ccttttaaatt 870

cctgggtggt ttggttgttt agattccttc cttgttatca agcctctcgg acaaaagggc 930

taggaaaagg tgatatgtct cctgatcata tcatacccat taagtataac ccattattta 990

gaaggttcta gggaaaaaag tagtatcttc ttattaaaca atcagcacag cctatatctt 1050

tggtctctca tggtgatcca agccagagac atcggttaaca aatagcacct gtgttggttg 1110

| Parameter | Value | Unit |
|--|--|----------------------|
| Initial concentration of H_2O_2 | 0.01 | M |
| Initial concentration of Fe^{2+} | 0.001 | M |
| Initial concentration of H^+ | 0.1 | M |
| Temperature | 25 | $^{\circ}\text{C}$ |
| Time | 0 to 100 | min |
| Rate of reaction | 0.001 | M min^{-1} |
| Rate constant k | 0.01 | min^{-1} |
| Order of reaction | 1 | |
| Half-life $t_{1/2}$ | 69.3 | min |
| Activation energy E_a | 50.0 | kJ mol^{-1} |
| Pre-exponential factor A | 1.0 | min^{-1} |
| Frequency factor $\log A$ | 0.0 | |
| Reaction mechanism | Proposed | |
| Rate-determining step | Step 1 | |
| Overall reaction | $\text{H}_2\text{O}_2 + \text{Fe}^{2+} + 2\text{H}^+ \rightarrow \text{Fe}^{3+} + 2\text{H}_2\text{O}$ | |
| Rate equation | $\text{Rate} = k[\text{H}_2\text{O}_2][\text{Fe}^{2+}]$ | |
| Concentration of H_2O_2 at time t | 0.009 | M |
| Concentration of Fe^{2+} at time t | 0.0009 | M |
| Concentration of H^+ at time t | 0.1 | M |
| Concentration of Fe^{3+} at time t | 0.001 | M |
| Concentration of H_2O at time t | 0.001 | M |
| Concentration of H_2O_2 at time $t=0$ | 0.01 | M |
| Concentration of Fe^{2+} at time $t=0$ | 0.001 | M |
| Concentration of H^+ at time $t=0$ | 0.1 | M |
| Concentration of Fe^{3+} at time $t=0$ | 0.0 | M |
| Concentration of H_2O at time $t=0$ | 0.0 | M |
| Concentration of H_2O_2 at time $t=\infty$ | 0.0 | M |
| Concentration of Fe^{2+} at time $t=\infty$ | 0.0 | M |
| Concentration of H^+ at time $t=\infty$ | 0.1 | M |
| Concentration of Fe^{3+} at time $t=\infty$ | 0.001 | M |
| Concentration of H_2O at time $t=\infty$ | 0.001 | M |
| Concentration of H_2O_2 at time $t=100$ | 0.009 | M |
| Concentration of Fe^{2+} at time $t=100$ | 0.0009 | M |
| Concentration of H^+ at time $t=100$ | 0.1 | M |
| Concentration of Fe^{3+} at time $t=100$ | 0.001 | M |
| Concentration of H_2O at time $t=100$ | 0.001 | M |
| Concentration of H_2O_2 at time $t=200$ | 0.008 | M |
| Concentration of Fe^{2+} at time $t=200$ | 0.0008 | M |
| Concentration of H^+ at time $t=200$ | 0.1 | M |
| Concentration of Fe^{3+} at time $t=200$ | 0.002 | M |
| Concentration of H_2O at time $t=200$ | 0.002 | M |
| Concentration of H_2O_2 at time $t=300$ | 0.007 | M |
| Concentration of Fe^{2+} at time $t=300$ | 0.0007 | M |
| Concentration of H^+ at time $t=300$ | 0.1 | M |
| Concentration of Fe^{3+} at time $t=300$ | 0.003 | M |
| Concentration of H_2O at time $t=300$ | 0.003 | M |
| Concentration of H_2O_2 at time $t=400$ | 0.006 | M |
| Concentration of Fe^{2+} at time $t=400$ | 0.0006 | M |
| Concentration of H^+ at time $t=400$ | 0.1 | M |
| Concentration of Fe^{3+} at time $t=400$ | 0.004 | M |
| Concentration of H_2O at time $t=400$ | 0.004 | M |
| Concentration of H_2O_2 at time $t=500$ | 0.005 | M |
| Concentration of Fe^{2+} at time $t=500$ | 0.0005 | M |
| Concentration of H^+ at time $t=500$ | 0.1 | M |
| Concentration of Fe^{3+} at time $t=500$ | 0.005 | M |
| Concentration of H_2O at time $t=500$ | 0.005 | M |
| Concentration of H_2O_2 at time $t=600$ | 0.004 | M |
| Concentration of Fe^{2+} at time $t=600$ | 0.0004 | M |
| Concentration of H^+ at time $t=600$ | 0.1 | M |
| Concentration of Fe^{3+} at time $t=600$ | 0.006 | M |
| Concentration of H_2O at time $t=600$ | 0.006 | M |
| Concentration of H_2O_2 at time $t=700$ | 0.003 | M |
| Concentration of Fe^{2+} at time $t=700$ | 0.0003 | M |
| Concentration of H^+ at time $t=700$ | 0.1 | M |
| Concentration of Fe^{3+} at time $t=700$ | 0.007 | M |
| Concentration of H_2O at time $t=700$ | 0.007 | M |
| Concentration of H_2O_2 at time $t=800$ | 0.002 | M |
| Concentration of Fe^{2+} at time $t=800$ | 0.0002 | M |
| Concentration of H^+ at time $t=800$ | 0.1 | M |
| Concentration of Fe^{3+} at time $t=800$ | 0.008 | M |
| Concentration of H_2O at time $t=800$ | 0.008 | M |
| Concentration of H_2O_2 at time $t=900$ | 0.001 | M |
| Concentration of Fe^{2+} at time $t=900$ | 0.0001 | M |
| Concentration of H^+ at time $t=900$ | 0.1 | M |
| Concentration of Fe^{3+} at time $t=900$ | 0.009 | M |
| | | |



tagtggaaga aatagtagct ccgctattca gatgcagagc actgcagcat ccagcctttc 2610
 aaagctgact cttctcaatc atctgtgggt catttgactt gattttttta gctaccctga 2670
 atttccagaa tgcagggttct aaagaaatct agatgagaga aagtatttga aaatgatttt 2730
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 aaagagctta gacttcaa atctctggtg aatg 3184

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 <212> PRT
 <213> Homo sapiens

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 Val Phe Thr Asn Gln Glu Val Lys Glu Lys Phe Gly Gly Leu Phe Arg
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 Thr Tyr Asp Asp Cys Val Thr Phe Gln Leu Phe Lys Ser Phe Arg Arg
 35 40 45
 Val Arg Ile Asn Phe Ser Asn Pro Lys Ser Ala Ala Arg Ala Arg Ile
 50 55 60
 Glu Leu His Glu Thr Gln Phe Arg Gly Lys Lys Leu Lys Leu Tyr Phe
 65 70 75 80
 Ala Gln Val Gln Thr Pro Glu Thr Asp Gly Asp Lys Leu His Leu Ala
 85 90 95
 Pro Pro Gln Pro Ala Lys Gln Phe Leu Ile Ser Pro Pro Ser Ser Pro

110

Lys Ile Ile Gln Thr Arg Arg Pro Gly Leu Pro Pro Ser Val Ser Asn
180 185 190

<213> Homo sapiens

Pro Val Ser Trp Gln Pro Ile Asn Asp Ala Thr Pro Val Leu Asn Tyr
115 120 125

Asp Leu Leu Tyr Ala Val Ala Lys Leu Gly Pro Gly Glu Lys Tyr Glu
 130 135 140

Leu His Ala Gly Thr Glu Ser Thr Pro Ser Val Val Val His Val Cys
 145 150 155 160

Asp Ser Asp Ile Glu Glu Glu Glu Asp Pro Lys Thr Ser Pro Lys Pro
 165 170 175

Lys Ile Ile Gln Thr Arg Arg Pro Gly Leu Pro Pro Ser Val Ser Asn
 180 185 190

<210> 20

<211> 828

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<213> Homo sapiens

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gat agc cag tca gat ctg tgt agc act gac caa gaa gag gaa gaa gag 100
 Asp Ser Gln Ser Asp Leu Cys Ser Thr Asp Gln Glu Glu Glu Glu Glu
 15 20 25

atg att ttt ggt gaa aat gaa gat gat ttg gat gag atg atg gat tta 148
 Met Ile Phe Gly Glu Asn Glu Asp Asp Leu Asp Glu Met Met Asp Leu
 30 35 40

agt gat ctg cct acc tca ctt ttt gct tgc agc gtc cat gaa gca gtg 196
 Ser Asp Leu Pro Thr Ser Leu Phe Ala Cys Ser Val His Glu Ala Val
 45 50 55

ttt gag gca cga gag cag aag gaa aga ttt gaa gca ctc ttc acc atc 244
 Phe Glu Ala Arg Glu Gln Lys Glu Arg Phe Glu Ala Leu Phe Thr Ile
 60 65 70

tat gat gac cag gtt act ttt cag ctg ttt aaa agc ttt aga aga gtc 292

| Table 1. Demographic characteristics of the study population | |
|--|----------------|
| Age (years) | 50.0 ± 10.0 |
| Gender | |
| Male | 50.0 |
| Female | 50.0 |
| Education (years) | 12.0 ± 2.0 |
| Occupation | |
| Professional | 50.0 |
| Managerial | 50.0 |
| Technical | 50.0 |
| Service | 50.0 |
| Unemployed | 50.0 |
| Marital status | |
| Married | 50.0 |
| Single | 50.0 |
| Divorced | 50.0 |
| Widowed | 50.0 |
| Health status | |
| Good | 50.0 |
| Fair | 50.0 |
| Poor | 50.0 |
| Smoking status | |
| Smoker | 50.0 |
| Non-smoker | 50.0 |
| Alcohol consumption | |
| Drinker | 50.0 |
| Non-drinker | 50.0 |
| Family size | 3.0 ± 1.0 |
| Income (USD/month) | 1000.0 ± 200.0 |
| Health insurance | |
| Yes | 50.0 |
| No | 50.0 |
| Comorbidities | |
| Hypertension | 50.0 |
| Diabetes | 50.0 |
| Cholesterol | 50.0 |
| Obesity | 50.0 |
| Depression | 50.0 |
| Anxiety | 50.0 |
| Stress | 50.0 |
| Sleep quality | |
| Good | 50.0 |
| Fair | 50.0 |
| Poor | 50.0 |
| Energy levels | |
| High | 50.0 |
| Low | 50.0 |
| Motivation | |
| High | 50.0 |
| Low | 50.0 |
| Life satisfaction | |
| High | 50.0 |
| Low | 50.0 |
| Overall health | |
| Good | 50.0 |
| Fair | 50.0 |
| Poor | 50.0 |

26

<212> PRT

<213> Homo sapiens

<400> 21

Met Leu Arg Asp Thr Met Lys Ser Trp Asn Asp Ser Gln Ser Asp Leu
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Cys Ser Thr Asp Gln Glu Glu Glu Glu Met Ile Phe Gly Glu Asn
20 25 30

Glu Asp Asp Leu Asp Glu Met Met Asp Leu Ser Asp Leu Pro Thr Ser
35 40 45

Leu Phe Ala Cys Ser Val His Glu Ala Val Phe Glu Ala Arg Glu Gln
50 55 60

Lys Glu Arg Phe Glu Ala Leu Phe Thr Ile Tyr Asp Asp Gln Val Thr
65 70 75 80

Phe Gln Leu Phe Lys Ser Phe Arg Arg Val Arg Ile Asn Phe Ser Lys
85 90 95

Pro Glu Ala Ala Ala Arg Ala Arg Ile Glu Leu His Glu Thr Asp Phe
100 105 110

Asn Gly Gln Lys Leu Lys Leu Tyr Phe Ala Gln Val Gln Met Ser Gly
115 120 125

Glu Val Arg Asp Lys Ser Tyr Leu Leu Pro Pro Gln Pro Val Lys Gln
130 135 140

Phe Leu Ile Ser Pro Pro Ala Ser Pro Pro Val Gly Trp Lys Gln Ser
145 150 155 160

Glu Asp Ala Met Pro Val Ile Asn Tyr Asp Leu Leu Cys Ala Val Ser
165 170 175

Lys Leu Gly Pro Gly Glu Lys Tyr Glu Leu His Ala Gly Thr Glu Ser
180 185 190

Thr Pro Ser Val Val Val His Val Cys Glu Ser Glu Thr Glu Glu Glu
195 200 205

Glu Glu Thr Lys Asn Pro Lys Gln Lys Ile Ala Gln Thr Arg Arg Pro
210 215 220

Asp Pro Pro Thr Ala Ala Leu Asn Glu Pro Gln Thr Phe Asp Cys Ala
225 230 235 240

Leu

<210> 22

<211> 241

<212> PRT

<213> Homo sapiens

<400> 22

Met Leu Arg Asp Thr Met Lys Ser Trp Asn Asp Ser Gln Ser Asp Leu
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Cys Ser Thr Asp Gln Glu Glu Glu Glu Met Ile Phe Gly Glu Asn
20 25 30

Glu Asp Asp Leu Asp Glu Met Met Asp Leu Ser Asp Leu Pro Thr Ser
35 40 45

Leu Phe Ala Cys Ser Val His Glu Ala Val Phe Glu Ala Arg Glu Gln
50 55 60

Lys Glu Arg Phe Glu Ala Leu Phe Thr Ile Tyr Asp Asp Gln Val Thr
65 70 75 80

Phe Gln Leu Phe Lys Ser Phe Arg Arg Val Arg Ile Asn Phe Ser Lys
85 90 95

Pro Glu Ala Ala Ala Arg Ala Arg Ile Glu Leu His Glu Thr Asp Phe
100 105 110

Asn Gly Gln Lys Leu Lys Leu Tyr Phe Ala Gln Val Gln Met Ser Gly
115 120 125

Glu Val Arg Asp Lys Ser Tyr Leu Leu Pro Pro Gln Pro Val Lys Gln
130 135 140

Phe Leu Ile Ser Pro Pro Ala Ser Pro Pro Val Gly Trp Lys Gln Ser
145 150 155 160

Glu Asp Ala Met Pro Val Ile Asn Tyr Asp Leu Leu Cys Ala Val Ser
165 170 175

Lys Leu Gly Pro Gly Glu Lys Tyr Glu Leu His Ala Gly Thr Glu Ser
180 185 190

Thr Pro Ser Val Val Val His Val Cys Glu Ser Glu Thr Glu Glu Glu
 195 200 205

Glu Glu Thr Lys Asn Pro Lys Gln Lys Ile Ala Gln Thr Arg Arg Pro
 210 215 220

Asp Pro Pro Thr Ala Ala Leu Asn Glu Pro Gln Thr Phe Asp Cys Ala
 225 230 235 240

Leu

<210> 23

<211> 720

<212> DNA

<213> Homo sapiens

<220>

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<400> 23

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 1 5 10 15

ttg gat gag atg atg gat tta agt gat ctg cct acc tca ctt ttt gct 97
 Leu Asp Glu Met Met Asp Leu Ser Asp Leu Pro Thr Ser Leu Phe Ala
 20 25 30

tgc agc gtc cat gaa gca gtg ttt gag gca cga gag cag aag gaa aga 145
 Cys Ser Val His Glu Ala Val Phe Glu Ala Arg Glu Gln Lys Glu Arg
 35 40 45

ttt gaa gca ctc ttc acc atc tat gat gac cag gtt act ttt cag ctg 193
 Phe Glu Ala Leu Phe Thr Ile Tyr Asp Asp Gln Val Thr Phe Gln Leu
 50 55 60

ttt aaa agc ttt aga aga gtc aga ata aat ttc agc aaa cct gaa gcg 241
 Phe Lys Ser Phe Arg Arg Val Arg Ile Asn Phe Ser Lys Pro Glu Ala
 65 70 75 80

gca gca aga gcg cga ata gaa ctc cac gaa aca gac ttc aat ggg cag 289
 Ala Ala Arg Ala Arg Ile Glu Leu His Glu Thr Asp Phe Asn Gly Gln
 85 90 95

aag cta aag cta tat ttt gca cag tcc tat ctc ctg ccg ccc cag cct 337

| 1. <i>Staphylococcus aureus</i> (n = 100) 2. <i>Staphylococcus aureus</i> (n = 100) 3. <i>Staphylococcus aureus</i> (n = 100) 4. <i>Staphylococcus aureus</i> (n = 100) 5. <i>Staphylococcus aureus</i> (n = 100) 6. <i>Staphylococcus aureus</i> (n = 100) 7. <i>Staphylococcus aureus</i> (n = 100) 8. <i>Staphylococcus aureus</i> (n = 100) 9. <i>Staphylococcus aureus</i> (n = 100) 10. <i>Staphylococcus aureus</i> (n = 100) | | 11. <i>Staphylococcus aureus</i> (n = 100) 12. <i>Staphylococcus aureus</i> (n = 100) 13. <i>Staphylococcus aureus</i> (n = 100) 14. <i>Staphylococcus aureus</i> (n = 100) 15. <i>Staphylococcus aureus</i> (n = 100) 16. <i>Staphylococcus aureus</i> (n = 100) 17. <i>Staphylococcus aureus</i> (n = 100) 18. <i>Staphylococcus aureus</i> (n = 100) 19. <i>Staphylococcus aureus</i> (n = 100) 20. <i>Staphylococcus aureus</i> (n = 100) | |
|---|----|--|-----|
| 1 | 2 | 3 | 4 |
| 5 | 6 | 7 | 8 |
| 9 | 10 | 11 | 12 |
| 13 | 14 | 15 | 16 |
| 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 |
| 25 | 26 | 27 | 28 |
| 29 | 30 | 31 | 32 |
| 33 | 34 | 35 | 36 |
| 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 |
| 45 | 46 | 47 | 48 |
| 49 | 50 | 51 | 52 |
| 53 | 54 | 55 | 56 |
| 57 | 58 | 59 | 60 |
| 61 | 62 | 63 | 64 |
| 65 | 66 | 67 | 68 |
| 69 | 70 | 71 | 72 |
| 73 | 74 | 75 | 76 |
| 77 | 78 | 79 | 80 |
| 81 | 82 | 83 | 84 |
| 85 | 86 | 87 | 88 |
| 89 | 90 | 91 | 92 |
| 93 | 94 | 95 | 96 |
| 97 | 98 | 99 | 100 |

Phe Glu Ala Leu Phe Thr Ile Tyr Asp Asp Gln Val Thr Phe Gln Leu
50 55 60

Phe Lys Ser Phe Arg Arg Val Arg Ile Asn Phe Ser Lys Pro Glu Ala
65 70 75 80

Ala Ala Arg Ala Arg Ile Glu Leu His Glu Thr Asp Phe Asn Gly Gln
85 90 95

Lys Leu Lys Leu Tyr Phe Ala Gln Ser Tyr Leu Leu Pro Pro Gln Pro
100 105 110

Val Lys Gln Phe Leu Ile Ser Pro Pro Ala Ser Pro Pro Val Gly Trp
115 120 125

Lys Gln Ser Glu Asp Ala Met Pro Val Ile Asn Tyr Asp Leu Leu Cys
130 135 140

Ala Val Ser Lys Leu Gly Pro Gly Glu Lys Tyr Glu Leu His Ala Gly
145 150 155 160

Thr Glu Ser Thr Pro Ser Val Val Val His Val Cys Glu Ser Glu Thr
165 170 175

Glu Glu Glu Glu Glu Thr Lys Asn Pro Lys Gln Lys Ile Ala Gln Thr
180 185 190

Arg Arg Pro Asp Pro Pro Thr Ala Ala Leu Asn Glu Pro Gln Thr Phe
195 200 205

Asp Cys Ala Leu
210

<210> 25

<211> 212

<212> PRT

<213> Homo sapiens

<400> 25

Asp Gln Glu Glu Glu Glu Glu Met Ile Phe Gly Glu Asn Glu Asp Asp
1 5 10 15

Leu Asp Glu Met Met Asp Leu Ser Asp Leu Pro Thr Ser Leu Phe Ala
20 25 30

Cys Ser Val His Glu Ala Val Phe Glu Ala Arg Glu Gln Lys Glu Arg
 35 40 45

Phe Glu Ala Leu Phe Thr Ile Tyr Asp Asp Gln Val Thr Phe Gln Leu
 50 55 60

Phe Lys Ser Phe Arg Arg Val Arg Ile Asn Phe Ser Lys Pro Glu Ala
 65 70 75 80

Ala Ala Arg Ala Arg Ile Glu Leu His Glu Thr Asp Phe Asn Gly Gln
 85 90 95

Lys Leu Lys Leu Tyr Phe Ala Gln Ser Tyr Leu Leu Pro Pro Gln Pro
 100 105 110

Val Lys Gln Phe Leu Ile Ser Pro Pro Ala Ser Pro Pro Val Gly Trp
 115 120 125

Lys Gln Ser Glu Asp Ala Met Pro Val Ile Asn Tyr Asp Leu Leu Cys
 130 135 140

Ala Val Ser Lys Leu Gly Pro Gly Glu Lys Tyr Glu Leu His Ala Gly
 145 150 155 160

Thr Glu Ser Thr Pro Ser Val Val Val His Val Cys Glu Ser Glu Thr
 165 170 175

Glu Glu Glu Glu Glu Thr Lys Asn Pro Lys Gln Lys Ile Ala Gln Thr
 180 185 190

Arg Arg Pro Asp Pro Pro Thr Ala Ala Leu Asn Glu Pro Gln Thr Phe
 195 200 205

Asp Cys Ala Leu
 210

<210> 26

<211> 1039

<212> DNA

<213> Homo sapiens

<400> 26

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 cagggacaaa gtgtaagttt ctactggaaa gaggtgacgt caacacctta gtcattttcc 180
 ctatgctaata taactttgct tggggagaat ggaaaaaaca gctgaggttt gctccacagc 240
 atcctgtttg gacagcaaata tcctgagtca agtcctgcat gcttgcaggc agacagggac 300

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 aattaacttt gcttggggag aatggaaaaa acagctgagg tttgcttcac agctgcttta 420
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 aacctggaaa ccaaagtccg ggtgacatac ttgatccctg gaatttcctg aaaacctcaa 660
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